Some Observations on Mr. Brande's *Paper on Calculi. By* Everard Home, *Esq. F.R.S.* Read May 19, 1808. [*Phil. Trans.* 1808, *p.* 244.]

In consequence of Mr. Brande's observations, that either acids or alkalies may be attended with injurious consequences, Mr. Home adduces various cases, for the purpose of doing away the expectation generally entertained, of relief from the use of solvents.

The first case is that of a person who had been relieved of the symptoms of calculus while taking saline draughts in the state of effervescence, but in whose bladder were found, after death, as many as twenty calculi; but the prostate gland had become enlarged, and had formed a barrier, so as to prevent the neck of the bladder from being irritated by them.

The second patient had used Perry's lixivium, with the same apparent benefit, which, in fact, arose from the same cause as the preceding.

Mr. Home has also found calculi in cysts, between the fasciculi of the muscular coat of the bladder, even so many as three or four in the same bladder, in which cases the usual symptoms of stone would not occur.

A gentleman having, at the age of seventy, voided a small uric calculus during a course of alkaline medicines, continued to use them at intervals for four or five years, suffering occasionally in a slight degree, but passing no more calculi. After his death about 350 light spongy calculi, consisting of the phosphates cemented by uric acid, were found in his bladder, which, in Mr. Home's estimation, were occasioned by the use of alkalies, in the manner suggested by Mr. Brande.

Another gentleman, who was found, by sounding, to have a stone in his bladder, took fossil alkali for about three months, after which he underwent the operation of lithotomy. The stone was found, externally, composed of pure triple phosphate of magnesia, in spiculated crystals, while the central parts had also a mixture of uric acid with the phosphates, so that the alkali had prevented the formation of uric acid; but the deposition of the phosphates appeared to Mr. Home more rapid than before.

On the Changes produced in Atmospheric Air, and Oxygen Gas, by Respiration. By W. Allen, *Esq. F.R.S. and* W. H. Pepys, *Esq. F.R.S.* Read June 16, 1808. [*Phil. Trans.* 1808, *p.* 249.]

The importance of a process so essential to life having excited proportional curiosity in philosophers from the earliest ages, the authors of the present communication take occasion to trace the history of their subject. Beginning with the conjectures of Hippocrates and of Plato, they proceed to notice the first accurate notions of Boyle and of Mayow, which were neglected and forgotten till the time when Priestley and Scheele first distinguished the two constituent parts of the atmosphere from each other.